REMARKS

Claims 1-6, 8-13, and 15-19 are pending in the application. Claims 1-6 and 8 have been amended and new claims 15-19 have been added by this response. Reconsideration and allowance of Applicant's claims are respectfully requested in view of the following remarks.

Applicant acknowledges the indication of allowable subject matter of claim 3. Claim three has been redrafted in independent format incorporating the features of claim 1. Therefore, it is respectfully submitted claim 3 is in condition for allowance.

Claim 10 was not rejected and therefore is believed in condition for allowance.

Claims 4, 5, and 12 were rejected under 35 U.S.C. § 103 being unpatentable over IEEE publication "Reliable Multicast Transport Protocol (RMTP)" by Paul et al. ("Paul") in view of U.S. Patent No. 6,970,476 to Jonsson et al. ("Jonsson"). This rejection is respectfully traversed.

Paul describes a multicast transport protocol in which receivers are grouped into local domains. Within each domain a "designated receiver" (DR) is responsible for processing acknowledgements from the other receivers in the domain and retransmitting lost packets to receivers in the domain that did not receive a packet. A sender (S) multicasts packets to all receivers. The DRs in first level provide their status to the sender. If enough DRs indicate failure, the S retransmits the multicast pack to all receivers otherwise the S transmits packets only to the requesting DRs. If a receiver in a domain does not receive a packet, the receiver sends a message to its DR which retransmits the packet in response. Receivers choose a DR from among all the DRs based on a TTL value (assumed to indicate the DR closest to the receiver in terms of number of hops).

Applicant's claim 4 recites, among other things, receiving from the access point information including an indication of a group which the wireless terminal belongs to; determining from the information whether the wireless terminal is selected as a repeater that is to retransmit the multicast packets; and receiving information from the access point about the order in which repeaters retransmit the multicast packets, receiving a retransmission command from the access point, and retransmitting the multicast packets to other wireless terminals when it is determined the wireless terminal is selected as a repeater terminal. Paul and Jonsson are silent with regard to at least these elements of Applicant's claim.

First, Applicant's claim recites that a terminal receives from an access point information indicating a group which the wireless terminal belongs to. Paul is silent with regard to this element of Applicant's claim. In its analysis of claim 4, the action points to page 409 paragraph 2 of Paul, stating RMTP groups receivers into local regions and uses a DR as a representative of the local region. Regardless of whether Paul teaches such, there is no description in Paul that an access point provides an indication to the receivers of what a group they belong to. In fact, Paul appears to teach the opposite. Paul describes that the receivers choose a DR and thus choose a group. (See, e.g., Paul p. 413 section B 9 which indicates "Therefore, if each receiver chooses the DR, whose SEND_ACK_TOME packet has the largest TTL value, it will have chosen the DR nearest to it in terms of number of hops). If this rejection is maintained, it is respectfully requested that the action provided a detailed explanation of how Paul describes this element of Applicant's claim.

Second, Applicant's claim recites "determining from the information whether the wireless terminal is selected as a repeater that is to retransmit the multicast packets." There is no description in Paul of a receiver determining from the information sent to the receiver from the sender that the receiver is a DR. Again, if this rejection is maintained, it is respectfully requested that the action provided a detailed explanation of how Paul describes this element of Applicant's claim.

Third, Applicant's claim recites "receiving information from the access point about the order in which repeaters retransmit the multicast packets, receiving a retransmission command from the access point, and retransmitting the multicast packets to other wireless terminals when it is determined the wireless terminal is selected as a repeater terminal." The system described by Paul does not care what order the DRs retransmit packets. In fact, the sender may not even know if a DR retransmits a packet (e.g., DRs in the second level do not communicate with the sender but send acknowledgement only to their DR), so it is not understood how the sender determine or sends an order of DRs to retransmit. In addition, Applicant can find no description of "receiving a retransmission command from the access point." The sender and/or DRs in Paul do not send commands to other DRs to retransmit packets. The DRs receive acknowledgements from the receivers in their domain and respond by retransmitting packets based on the receiver acknowledgements. The office action states "The DRs send the own status to the sender

indicating ... which packets they have not received." This is only true of DRs in the first level of the tree. DRs lower on the tree only communicate with their respective DRs and not the sender (e.g., a DR send its status to the DR least upstream from itself in the multicast tree and thus, the sender receives only as many status messages as there are DRs in the highest level of the tree as indicated by Paul in paragraph bridging p. 409 and p. 410). Even so, the access point or sender does not command the DR to retransmit packets. The DR only retransmits a packet in response to the packet not being received by one of its domain receivers and not in response to direction from the sender.

It is respectfully submitted that Jonsson does not provide for any of the deficiencies of Paul noted above with respect to claim 4. Claims 5 and 12 depend from claim 4 and are believed to be allowable for at least the reasons given for claim 4. As a result, even if assuming *arguendo* that Paul is combined with Jonsson, the combination fails to describe or suggest all of the elements of Applicant's claims 4, 5, and 12 and therefore does not establish a *prima facia* case of obvious under Section 103 with regard to claims 4, 5, and 12. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1, 2, and 11 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Paul in view of Jonsson and U.S. Patent Application Publication No. 2002/0021684 to Toshimitsu et al. ("Toshimitsu"). This rejection is respectfully traversed.

Claim 1 recites, among other things, "arranging the order in which the repeaters retransmit multicast packets to their groups." Paul is silent with regard to at least this element of Applicant's claim.

In its rejection of claim 1 the action states with regard to this element "the function of RMTP is to deliver packets from the sender to the receiver in sequence along the multicast tree." Regardless of the veracity of this statement, Applicant does not see how this statement is relevant to the recitation of claim 1. As explained above, each DR retransmits packets based on whether the DR's domain receivers receive the packets the DR transmitted to the. The retransmission of packets by any DR is independent of the retransmission by any other DR. In fact, the sender does not know of the order that any DRs retransmit, and therefore the sender can't arrange an order of retransmission. As there is no order or sequence of DR retransmission, Paul does not describe at least this element of Applicant's claim.

Claim 1 also recites, among other things, "multicasting each of the multicast packets including the created multicast packet train header to all the wireless terminals; and retransmitting by the repeater terminal in each group according to the arranged order the multicast packets to each of the terminals in the group." As pointed out above, Paul does not describe an order in which the repeaters retransmit packets. In addition, Paul does not describe "retransmitting by the repeater in each group." Paul describes only the DRs that receive an acknowledgement of missing packets from receivers in their domain retransmit packets. In other words, if all receivers in a DR's domain receive their packets, there is no retransmission of packets by the DR. In marked contrast, in Applicant's system the repeater each group retransmits packets and the repeaters transmit in an arranged order of repeaters, neither of which is described by Paul.

It is respectfully submitted that Jonsson and Toshimitsu do not provide for any of the deficiencies of Paul noted above with respect to claim 1. Claims 2 and 11 depend from claim 1 and are believed to be allowable for at least the reasons given for claim 1. As a result, even if assuming *arguendo* that Paul is combined with Jonsson and Toshimitsu, the combination fails to describe or suggest all of the elements of Applicant's claims 1, 2, and 11, and therefore does not establish a *prima facia* case of obvious under Section 103 with regard to Applicant's claims 1, 2, and 11. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 6, 8, 9, and 13 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over European Application Publication No. EP 1 146 683 by Sato et al. ("Sato") in view of Paul. This rejection is respectfully traversed.

Sato describes system including a base station servicing a number of mobile stations. According to Sato, only specified mobile stations from a group of mobile stations are retransmission control permitted mobile stations. In other words, only designated terminals can send a retransmission request to the base station to retransmit multicast information (e.g., if the mobile station fails to receive a packet) to all the terminals. Typically, the designated retransmission stations tend to be the ones with the weakest signal as they are more likely to fail to receive a packet.

Applicant's claim 6 recites, among other things, "selecting a repeater from each group to retransmit multicast packets to its group, wherein selecting a repeater includes selecting a

wireless terminal in a group that outputs a signal with the greatest amplitude as the repeater for the group by determining a status of a channel of the wireless terminal based on the amplitude of signal output from the wireless terminal and determining the order in which the repeaters retransmit the multicast packets; and transmitting a retransmission command to the repeaters in the order in which the repeaters retransmit the multicast packets." Sato and Paul, either alone or in combination, do not describe or suggest at least these elements of Applicant's claim.

With regard to claim 6, Applicant's claim recites "selecting a repeater from each group to retransmits multicast packets to its group." The action states with regard to this element that Sato teaches "determining at least one radio terminal permitted to be placed in retransmission control." Applicant respectfully points on that none of the mobile stations placed in retransmission control are repeater terminals. In fact, there are no repeater terminals in Sato. The retransmission control terminals of Sato do not retransmit packets. Retransmission control terminals of Sato are allowed to request retransmission of packets by the base station; however, the terminals do not retransmit the packets.

With regard to claim 6's recitation of "selecting a wireless terminal in a group that outputs a signal with the greatest amplitude as the repeater for the group" the action states Sato teaches "the retransmission control method configured on the basis of a quality of communication (greatest amplitude) between the information delivery apparatus and each of the radio terminals." Applicant has pointed out that Sato does not teach repeater terminals. Furthermore, the retransmission control mobile stations (identified by the action as corresponding to the Applicant's repeater terminals) are not selected from the stations with the greatest amplitude. Sato describes three methods of picking retransmission mobile stations. The first method randomly assigns a small number of terminals from the group of terminals (See, e.g., paragraphs 49 and 50 of Sato). The second method teaches picking the terminals with the weakest signals (terminals with power levels below a threshold) as the retransmission control terminals because these terminals are the most likely to fail to receive data (See, e.g., paragraphs 52 and 53 of Sato). The third method is based on distance in which mobile stations which are the farthest from the base station are placed in retransmission control (See, e.g., paragraphs 56 and 57 of Sato). In fact, the second and third methods are the opposite of selecting terminals with the "greatest" amplitude.

As pointed out in previous responses Paul is silent with regard to using amplitude to select DRs.

The action acknowledges Sato fails to describe "transmitting a retransmission command to the repeaters in the order in which the repeaters retransmit the multicast packets." The action goes on to state that Paul determines an order and transmits a retransmission command; however, as pointed out above, Paul does not. First, the sender and DRs in Paul do not know an order that the DRs retransmit packets because the DRs retransmit data based on requests from their receivers not in response to a command from the sender or from other DRs. Second, there is no retransmission command. Once again Applicant points out, DRs retransmit packets based on NACKs from their receivers and not in response to a command from the sender or other DRs.

Claims 8, 9, and 13 are believed to be allowable for at least the reasons given above for claim 6.

As a result, even if assuming *arguendo* that Sato is combined with Paul, the combination fails to describe or suggest all of the elements of Applicant's claims, and therefore does not establish a *prima facia* case of obvious under Section 103 with regard to Applicant's claims 6, 8, 9, and 13. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

It is respectfully submitted that all claims are in condition for allowance, and early notice of the same is respectfully solicited. If any questions remain, the Examiner is invited to contact Applicant's representative at the telephone number listed above.